

10 Bio-Rad Laboratories, Inc.,

11 NO. C 02-05946 JW

12 Plaintiff,

13 v.

14 **ORDER GRANTING PARTIAL
SUMMARY JUDGMENT**

15 Applera Corporation, et al.,

16 Defendants.

17 **I. INTRODUCTION**18 This is a patent dispute. Plaintiff, Bio-Rad Laboratories, Inc. (“Bio-Rad”), owns United States
19 Patent No. 5,089,111 (“111 patent”) and asserts that certain products made by Defendant, Applera
20 Corporation (“Applera”), infringe one or more claims of the ’111 patent.21 The motion presently before the Court is for partial summary judgment. Applera requests partial
22 summary judgment that the chemical, polyacrylamide, is not an equivalent to “a substantially linear polymer
23 selected from the group consisting of methyl cellulose, hydroxypropyl methyl cellulose, hydroxyethyl methyl
24 cellulose, and hydroxybutyl methyl cellulose.” ’111 patent, 12:22-25. Applera argues that Bio-Rad, is
25 estopped from asserting infringement by the doctrine of equivalents because Bio-Rad made a narrowing
26 amendment to its claims in response to a rejection based on patentability. Bio-Rad disputes Applera’s
27 Motion and maintains that its amendment does not preclude it from asserting infringement by the doctrine of
28 equivalents.

1 The Court held oral argument on November 29, 2004. The parties, with this Court's approval,
2 stipulated to multiple stays proceedings, including staying a decision on Applera's Motion for Partial
3 Summary Judgment. On March 2, 2005, the Court conducted a case management conference. The
4 parties then informed the Court that they were no longer in settlement negotiations, and thus, requested the
5 Court to proceed with its decision on the pending motion. Based on all of the submissions and arguments
6 to date, the Court GRANTS Applera's Motion for Partial Summary Judgement.

II. BACKGROUND

8 Bio-Rad filed U.S. Patent Application No. 07/303,174 (“174 application”) with the United States
9 Patent and Trademark Office (the “PTO”) on January 27, 1989. The ’174 application initially contained
10 27 claims and was entitled, “Electrophoretic Sieving in Gel-Free Media with Dissolved Polymers.” Initially
11 filed claims 1 and 27 were the only independent claims. Of these 27 initially filed claims, initially filed claim
12 1 and initially filed claim 27 are relevant to this discussion.

13 Initially filed claim 1 of the '174 application read as follows:

14 1. A method of separating a mixture of sample ions of varying molecular weights in
15 a sample into components, said method comprising electrophoretically passing said sample
16 through a separation column containing a gel-free aqueous solution of a substantially linear
17 polymer having a molecular weight of about 10,000 to about 2,000,000, said molecular
 weight being within a range of about 0.1 to about 200 times the average molecular weight
 of said macromolecular species in said mixture, the concentration of said polymer in said
 solution being sufficient to retard the flow of said species through said separation column to
 degrees which vary with the molecular weights of said species.

18 Garber Decl., Exh. 1, ABBR065864. Initially filed claim 27 of the '174 application read as follows:

19 27. A method of separating a mixture of polynucleotide chains in a sample, said
20 polynucleotide chains each containing from about 10 to 10,000 base pairs, said method
21 comprising electrophoretically passing said sample through a capillary column containing a
22 gel-free aqueous solution of a substantially linear polymer selected from the group
23 consisting of methyl cellulose, hydroxypropyl methyl cellulose, hydroxyethyl methyl
cellulose, and hydroxybutyl methyl cellulose, said polymer characterized in terms of the
viscosity of a 2% aqueous solution thereof being within a range of about 1,000 centipoise
to about 10,000 centipoise at 25°C, and the concentration of said polymer in said solution
is from about 0.1% to about 0.5% by weight.

Id. at ABBR065868.

25 The PTO examiner rejected initially filed claims 1-13 of the '174 application as obvious under 35
26 U.S.C. § 103 in light of the Tietz, et al., Electrophoresis in Uncrosslinked Polyacrylamide Molecular

1 Sieving and its Potential Applications, Electrophoresis, 7 1986, 217-220 (“Tietz”) and Bode, SDS-
2 Polyethyleneglycol Electrophoresis: A Possible Alternative to SDS- Polyacrylamide Ge Electrophoresis,
3 FEBS Lettes, 65(1) (1976) at 56-58 (“Bode”). The examiner stated that because Tietz “successfully
4 performed molecular sieving experiments using non-crosslinked linear polyacrylamide” claims 1-13 would
5 be obvious to the person having ordinary skill in the art. Id. at ABBR065889. In the same office action,
6 the examiner allowed initially filed claim 27 without comment.

7 In response to the office action, Bio-Rad amended initially filed claim 1 to read:

8 1. A method of separating a mixture of sample ions of varying molecular weights in
9 a sample into components, said method comprising electrophoretically passing said sample
10 through a separation column containing a gel-free aqueous solution of a substantially linear
water-soluble cellulose derivative polymer having a molecular weight of about 10,000 to
11 about 2,000,000, said molecular weight being within a range of about 0.1 to about 200
12 times the average molecular weight of said sample ions [macromolecular species] in said
mixture, the concentration of said polymer in said solution being sufficient to retard the flow
of said species through said separation column to degrees which vary with the molecular
weights of said species.

13 Id. at ABBR065894-95 (double underlined text indicates addition; bracketed text indicates deletion)
14 (amendment indicia in original). Initially filed claim 27 was unchanged. After Bio-Rad’s amendment to
15 initially filed claim 1, the PTO examiner issued a Notice of Allowability.

16 Following the Notice of Allowability Bio-Rad abandoned the ’174 application in favor of a
17 Continuation-in-Part application (“CIP”). Notably, the CIP retained the title of the ’174 application, an
18 amended version of initially filed claim 1, and the original version of initially filed claim 27. The CIP issued
19 as the ’111 patent on February 18, 1992.

20 Amended claim 1 of the abandoned ’174 application was again altered in the newly filed CIP.
21 Claim 1 of the CIP read:

22 1. A method of separating a mixture of sample ions of varying molecular weights in
23 a sample into components, said method comprising electrophoretically passing said sample
24 through a separation column containing a gel-free aqueous solution of a water-soluble
polymer selected from the group consisting of cellulose derivatives, saccharide-based and
25 substituted saccharide-based polymers, polysilanes, polyvinylalcohol and
26 polyvinylpyrrolidone, said polymer having a molecular weight of about 10,000 to about
2,000,000, said molecular weight being within a range of about 0.1 to about 200 times the
average molecular weight of said sample ions in said mixture, the concentration of said
27 polymer in said solution being sufficient to retard the flow of said species through said

1 separation column to degrees which vary with the molecular weights of said species.

2 Id. at ABBR065950. Initially filed claim 27 from the '174 application was retained, unchanged, as claim
3 16 of the CIP. The PTO issued a Notice of Allowability for the CIP without any rejections.

4 However, the PTO included a Statement of Reasons with its Notice of Allowability. The Statement
5 of Reasons recognized that no prior art taught or fairly suggested practicing the method of separating a
6 mixture of sample ions described in claim 1 or claim 16 of the CIP application. Garber Decl., Exh. 3,
7 ABBR065974-75. The examiner recited claims 1 and 16 of the CIP application and underlined the (1)
8 "electrophoretically passing" and (2) "said molecular weight being within a range of about 0.1 to about 200
9 times the average molecular weight of said sample ions in said mixture" language of claim 1. Id. The
10 examiner also underlined the (1)"the group consisting of methyl cellulose, hydroxypropyl methyl,
11 hydroxyethyl methyl cellulose, and hydroxybutyl methyl cellulose," (2) "the viscosity of a 2% aqueous
12 solution thereof being within a range of about 1,000 centipoise to about 10,000 centipoise at 25°C," and
13 (3) "the concentration of said polymer in said solution is from about 0.1% to about 0.5% by weight"
14 language of claim 16. Id. Bio-Rad made no comment on the examiner's Statement of Reasons and the
15 '111 patent issued from the CIP application.

16 Bio-Rad filed the present lawsuit against Applera on December 26, 2002. Applera manufactures
17 various performance optimized polymers ("POP") that are used for molecular sieving. Applera's POP
18 products contain polydimethylacrylamide ("PDMA") and combinations of PDMA and polyacrylamide.
19 Bio-Rad claims that the polyacrylamide and PDMA in Applera's POP products represent equivalents to
20 claim 16 of the '111 patent. Thus, according to Bio-Rad, Applera's POP products infringe claim 16 of the
21 '111 patent.

22 Applera counters that prosecution history estoppel precludes Bio-Rad from asserting the doctrine
23 of equivalents against Applera's polyacrylamide-containing POP products. Applera asserts that Bio-Rad's
24 amendment to initially filed claim 1 in the '174 application was to overcome a rejection related to
25 patentability. Applera notes that initially filed claim 27 contained the same objectionable limitation as
26 initially filed claim 1, that is, "a gel-free aqueous solution of a substantially linear polymer." Applera argues,
27 however, that the PTO allowed initially filed claim 27 without amendment because initially filed claim 27
28

1 was limited on its face to a discrete group of chemicals not including polyacrylamide. Thus, Applera asks
2 the Court to find that Bio-Rad's amendment to initially filed claim 1 should also preclude the assertion of
3 infringement against Applera's polyacrylamide-containing POP products by doctrine of equivalents as to
4 initially filed claim 27, now claim 16 of the '111 patent.

5 **III. STANDARDS**

6 Summary judgment is proper "if the pleadings, depositions, answers to interrogatories, and
7 admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material
8 fact and that the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). The
9 non-moving party "must set forth specific facts showing that there is a genuine issue for trial." Fed. R. Civ.
10 P. 56(e). To preclude the entry of summary judgment, the non-moving party must bring forth material facts,
11 i.e., "facts that might affect the outcome of the suit under the governing law Factual disputes that are
12 irrelevant or unnecessary will not be counted." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247-48
13 (1986).

14 The construction of patent claims is a question of law for the Court. See Markman v. Westview
15 Instruments, Inc., 517 U.S. 370, 384 (1996). Likewise, the question of whether prosecution history
16 estoppel applies is a matter of law for the Court to decide. Glaxo Wellcome, Inc. v. Impax Laboratories,
17 Inc., 356 F.3d 1348, 1351 (Fed. Cir. 2004). As such, a question of prosecution history estoppel is
18 properly decided on a motion for summary judgment. Id. The moving party "is entitled to summary
19 judgment [on prosecution history estoppel] only if the facts and inferences, when viewed in the light most
20 favorable to [the non-moving party], would not persuade a reasonable jury to return a verdict for . . . the
21 nonmoving party." Id. (citing Anderson, 477 U.S. at 255).

22 "According to the Supreme Court in Festo, 'a narrowing amendment made to satisfy any
23 requirement of the Patent Act may give rise to an estoppel.'" Glaxo, 356 F.3d at 1351-52 (quoting Festo
24 Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 736 (2002) (Festo VIII)). The
25 estoppel is presumptive and may be rebutted if the patentee can show "[1] that the alleged equivalent could
26 not reasonably have been described at the time the amendment was made, or [2] that the alleged equivalent
27 was tangential to the purpose of the amendment, or [3] that the equivalent was not foreseeable (and thus

1 not claimable) at the time of the amendment.” Glaxo, 356 F.3d at 1532 (citing Festo VIII, 535 U.S. at
2 740-41). An equivalent is foreseeable if the patentee can “show that at the time of the amendment one
3 skilled in the art could not reasonably have been expected to have drafted a claim that would have literally
4 encompassed the alleged equivalent.” Festo VIII, 535 U.S. at 733.

5 An amendment to one claim may “infect” another claim with estoppel. Glaxo, 356 F.3d at 1356.
6 The Federal Circuit Court of Appeals (“FCCA”) has recognized “that subject matter surrendered via claim
7 amendments during prosecution is also relinquished for other claims containing the same limitation.” Id.
8 The “rule [ensures] consistent interpretation of the same claim terms in the same patent.” Id.

9 **IV. DISCUSSION**

10 Applera argues that Bio-Rad’s amendment to the ’174 application in response to the PTO’s
11 rejection of initially filed claims 1-13 triggers prosecution history estoppel as to claim 16 of the ’111 patent.
12 Bio-Rad counters that prosecution history estoppel should not apply to claim 16 of the ’111 patent for
13 several reasons. First, Bio-Rad argues that it overcomes any presumptive estoppel because the use of
14 polyacrylamide would have been unforeseeable at the time of the amendment. Second, Bio-Rad argues
15 that claim 16 of the ’111 patent does not contain the same limitation as initially filed claim 1 and thus should
16 not be infected by any estoppel applied to initially filed claim 1. Finally, Bio-Rad argues that amending
17 initially filed claim 1, without more, does not link claim 16 of the ’111 patent to initially filed claim 1 such
18 that claim 16 should be subject to prosecution history estoppel.

19 **A. Presumptive Prosecution History Estoppel**

20 Bio-Rad amended the ’174 application in response to the PTO examiner’s obviousness rejection.¹
21 Obviousness, under 35 U.S.C. § 103, is a rejection based on patentability under the Patent Act. See

23 ¹ Applera contends that the examiner rejected initially filed claim 1 and not initially filed claim 27
24 because claim 27 was limited to the members of its Markush group, none of which are polyacrylamide.
25 Whereas initially filed claim 1 was limited only by a general description of the attributes of the claimed
26 “substantially linear polymer.” Applera cites the examiner’s Statement of Reasons that issued with the
27 Notice of Allowability for support of its position. Applera notes that the examiner drew particular attention
to the Markush group in initially filed claim 27, now claim 16 and stated that even unamended, the claim
avoided prior art references. Applera argues that the examiner’s statements imply that the absence of
polyacrylamide in the Markush group was the reason it avoided the prior art. The Court notes that initially
filed claim 27 appears, on its face, more specific than initially filed claim 1.

1 Festo VIII, 535 U.S. at 736. Bio-Rad's amendment to initially filed claim 1 changed the limitation "gel-free
2 aqueous solution of a substantially linear polymer" to "gel-free aqueous solution of a substantially linear
3 *water-soluble cellulose derivative polymer*." In both Warner-Jenkinson and Festo VIII the Supreme
4 Court made "clear that a narrowing amendment may occur when either (1) a preexisting claim limitation is
5 narrowed by amendment or (2) a new claim limitation is added by amendment." Honeywell Intern. Inc. v.
6 Hamilton Sundstrand Corp., 370 F.3d 1131, 1140 (Fed. Cir. 2004)(citing Warner-Jenkinson Co. v. Hilton
7 Davis Chemical Co., 520 U.S. 17, 30 (1997), and Festo VIII, 535 U.S. at 728). The addition of "water-
8 soluble cellulose derivative" narrowed initially filed claim 1. Thus, Bio-Rad's amendment of initially filed
9 claim 1 was "a narrowing amendment made to satisfy [the non-obviousness] requirement of the Patent Act
10 [and] may give rise to an estoppel." Id.

11 Before determining whether Bio-Rad's amendment to initially filed claim 1 infects claim 16 of the
12 '111 patent with prosecution history estoppel, the Court must determine whether prosecution history
13 estoppel applies to initially filed claim 1 and whether Bio-Rad can overcome the presumption.

14 The effect of finding prosecution history estoppel is that the patentee presumptively surrenders his
15 or her right to use the doctrine of equivalents to recapture "subject matter conceded during prosecution."
16 Honeywell, 370 F.3d at 1141; Glaxo, 356 F.3d at 1351-52. Here, the PTO examiner rejected initially
17 filed claim 1 because of prior art that "successfully performed molecular sieving experiments using non-
18 crosslinked linear polyacrylamide." Garber Decl., Exh. 1, ABBR065889. In response, Bio-Rad gave up
19 the more general limitation "gel-free aqueous solution of a substantially linear polymer," which includes
20 polyacrylamide, for the more restrictive limitation "gel-free aqueous solution of a substantially linear water
21 soluble cellulose derivative polymer," that does not include polyacrylamide. Thus, unless Bio-Rad can
22 rebut the presumption, it is estopped from asserting that Applera's POP products infringe claim 1 of the
23 '111 patent by way of the doctrine of equivalents.²

24 Bio-Rad argues that it overcomes any presumption of estoppel with regard to polyacrylamide
25 because the use of polyacrylamide and PDMA, as it is used in the allegedly infringing products, was

27 ²Indeed, Bio-Rad does not assert that claim 1 of the '111 patent is infringed by Applera's
28 polyacrylamide-containing POP products.

1 unforeseeable at the time of Bio-Rad's amendment. If an "equivalent [was] unforeseeable at the time of the
2 application . . . the patentee can overcome the presumption that prosecution history estoppel bars a finding
3 of equivalence." Festo VIII, 535 U.S. at 740-41. The FCCA has explained that:

4 if the alleged equivalent represents later-developed technology (e.g. transistors in relation to
5 vacuum tubes, or Velcro® in relation to fasteners) or technology that was not known in the
6 relevant art, then it would not have been foreseeable. In contrast, old technology, while not
7 always foreseeable, would more likely have been foreseeable. Indeed, if the alleged
8 equivalent were known in the prior art in the field of the invention, it certainly should have
9 been foreseeable at the time of the amendment.

10 Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359, 1369 (Fed. Cir. 2003) (Festo
11 IX).

12 Bio-Rad argues that PDMA and polyacrylamide were not used in combination to
13 electrophoretically separate ions until years after the '174 application was amended. Blanch Decl. ¶ 6.
14 Bio-Rad also argues that the possibility of foreseeability is reduced because there were "well-known
15 problems with using [polyacrylamide] in general as well as the inability to create the proper range of
16 molecular weights for PDMA and mixtures of PDMA and polyacrylamide." Opposition, 18. Furthermore,
17 Bio-Rad offers a list of mechanical problems, purity problems, manufacturing problems, toxicity problems,
18 and implementation problems that it asserts would have made the use of PDMA or a combination of
19 PDMA and polyacrylamide unforeseeable when initially filed claim 1 was amended.

20 This Court disagrees, however, that the use of PDMA or a combination of PDMA and
21 polyacrylamide was sufficiently unforeseeable at the time of the amendment to overcome the presumption of
22 estoppel. First, Bio-Rad's recitation of "well-known" problems with the use of polyacrylamide and PDMA
23 does not necessarily suggest that it would have been unforeseeable at the time of the amendment that
24 PDMA could represent an equivalent to the subject matter claimed in initially filed claim 1. Indeed, the fact
25 that a chemical is difficult to manufacture or had not yet been used for the purpose claimed does not make it
26 unforeseeable. Cf. Festo IX, 344 F.3d at 1369 (stating that transistors, in relation to vacuum tubes,
27 represent an unforeseeable technology).

1 Second, the PTO examiner made his rejection based on prior art that used polyacrylamide in
2 molecular sieving.³ Thus indicating that in drafting initially filed claim 1 with broad coverage of a “gel-free
3 aqueous solution of a substantially linear polymer,” coverage of acrylamides was not only foreseeable, but
4 accomplished. Thus, the Court finds that “at the time of the amendment one skilled in the art could . . .
5 reasonably have been expected to have drafted a claim that would have literally encompassed the alleged
6 equivalent.” Festo VIII, 535 U.S. at 733. Accordingly, the amendment to initially filed claim 1 imposes a
7 presumption of prosecution history estoppel, which Bio-Rad is unable to overcome on grounds of
8 unforseeability.

9 **B. Infectious Estoppel**

10 Applera argues that the amendment to initially filed claim 1 creates an estoppel that should be
11 applied to initially filed claim 27, now claim 16 of the '111 patent. Bio-Rad contends that the estoppel
12 should not be applied because the two claims do not contain the same limitation and there was no action by
13 Bio-Rad in the course of the amendment that linked the claims in a way that requires the estoppel to be
14 imposed on claim 16 of the '111 patent.

15 Although Bio-Rad only amended initially filed claim 1, the same limitation, “gel-free aqueous
16 solution of a substantially linear polymer,” was contained in initially filed claim 27. Garber Decl., Exh. 1,
17 ABBR065864, ABBR065868. Bio-Rad argues that because initially filed claim 1 and initially filed claim
18 27 each claim different ionic separations the amendment to “claim 1 did not add the same limitation . . . that
19 is present in unamended claim 16.” Opposition, 8. This argument, however, misses the point. Infectious
20 estoppel is a mechanism employed to maintain the consistency of terms and limitations throughout a patent.
21 Glaxo, 356 F.3d at 1356 (stating that infectious estoppel is a “quest for consistency” among claim terms).
22 Both claims as initially filed and at the time of the amendment shared identical language. Insofar as the
23 terms shared by the claims present identical limitations, this Court sees no reason why the terms of the
24

25 ³ The Court ordered supplemental briefing on the issue of whether the accused polymers and
26 Tietz’s polyacrylamide are different. After reviewing the parties’ submissions the Court is satisfied that the
27 accused polymers are sufficiently similar to Tietz’s. Accordingly, the rejection based on Tietz suggests that
at the time of the amendment the drafter of the '111 patent could have drafted a claim that would have
literally encompassed the accused products.

1 limitations would not have been construed alike. The two claims, although to different ionic separations,
2 contained the same limitation. Thus, initially filed claim 27, now claim 16 of the '111 patent does "recite the
3 amended term" and is subject to the same estoppel. Id.

4 Bio-Rad also argues that the estoppel does not apply to claim 16 of the '111 patent unless there
5 exists "some additional basis in combination with the narrowing amendment that justifie[s] infecting the
6 unamended claim with the same estoppel and Festo presumption as the [claim] that [was] amended to
7 include the same limitation." Opposition, 12. Bio-Rad cites Builders Concrete, Inc. v. Bremerton
8 Concrete Prods. Co., 757 F.2d 255 (Fed. Cir. 1985), for the proposition that prosecution history estoppel
9 is not limited to amendment based estoppel, but may arise in other ways, like argument based estoppel.
10 Bio-Rad then argues that the court in Glaxo relied on Builders and allowed the infectious estoppel because
11 the patentee failed to respond to the examiner's argument that the amended limitation was critical to all
12 claims. Id. (citing Glaxo, 356 F.3d at 1356.) Thus, according to Bio-Rad, both the amendment and the
13 argument were necessary bases for applying the infectious estoppel.

14 This Court does not read Glaxo to require an additional basis in combination with a narrowing
15 amendment before infecting an unamended claim with estoppel. Instead, it appears that the FCCA was
16 more concerned with the consistent interpretation of claim limitations than adding prerequisites to the
17 doctrine of prosecution history estoppel. See Glaxo, 356 F.3d at 1356 ("Thus, this court directs consistent
18 interpretation of claim terms within a patent in view of the prosecution history."); see also Am. Permahedge,
19 Inc. v. Barcana, Inc., 105 F.3d 1441, 1446 (Fed.Cir.1997) (stating that "identical claim terms used in
20 different claims must be interpreted consistently" and "under the doctrine of equivalents, we see no reason
21 to assign different ranges of equivalents for the identical term used in different claims in the same patent").
22 Although argument accompanying an amendment may indicate precisely what subject matter is
23 surrendered, argument is not a necessary basis for applying estoppel to an unamended claim.

24 The Court finds that Bio-Rad is estopped from asserting that Applera's POP products containing
25 polyacrylamide or PDMA are equivalents to, and thereby infringe, initially filed claim 27, now claim 16 of
26 the '111 patent. Bio-Rad may not use claim 16 of the '111 patent to recover the subject matter it
27 surrendered by amending initially filed claim 1.

1 **V. CONCLUSION**

2 For the reasons stated above the Court GRANTS Applera's Motion for Partial Summary
3 Judgment.

4

5 Dated: August 12, 2005

6 /s/ James Ware
7 JAMES WARE
8 United States District Judge

United States District Court

For the Northern District of California

1 **THIS IS TO CERTIFY THAT COPIES OF THIS ORDER HAVE BEEN DELIVERED TO:**

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12 **Dated: August 12, 2005**

13 **Richard W. Wierking, Clerk**

14 **By: /s/ JW Chambers**
15 **Ronald L. Davis**
16 **Courtroom Deputy**

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